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EFFECTS OF BREED OF EWE AND MANAGEMENT SYSTEM ON THE PRODUCTION OF LAMB AND WOOL

3. CUMULATIVE PRODUCTION PER EWE PRESENT

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SHEEP 85-8

Summary

Cumulative production of lamb and wool was evaluated for Targhee, Suffolk x Targhee and Finnsheep x Targhee ewes. Ewes were maintained under either farm (Brookings, South Dakota) or range (Buffalo, South Dakota) conditions. All ewes were allowed six opportunities to lamb unless eliminated by death, failure to lamb at two consecutive opportunities or severe reproductive abnormalities. Cumulative production was calculated by adding a ewe's previous production to the year being evaluated. Only ewes remaining for the duration of the study were included in this analysis. Results after 6 years are reported here. Finnsheep x Targhee ewes gave birth to and weaned more lambs ($P < .05$) per ewe exposed than Targhee or Suffolk x Targhee ewes. Finnsheep x Targhee also weaned more pounds of lamb ($P < .05$) per ewe exposed than Targhee or Suffolk x Targhee ewes. Targhee ewes produced more ($P < .05$) pounds of wool than Suffolk x Targhee or Finnsheep x Targhee ewes. Farm flock ewes had greater ($P < .05$) production for number of lambs born and pounds of lamb born than did range flock ewes. Single-born ewes produced more ($P < .05$) wool than multiple-born ewes.

(Key Words: Sheep, Lamb, Wool, Breed, Lifetime Production, Management Systems.)

Introduction

Breeds of sheep will exhibit differences in lamb and wool production on a lifetime basis as well as a yearly basis. When based on a per ewe present basis, cumulative production represents that amount of production a producer could expect to market from a given set of ewes. Producers need to recognize that an economic advantage exists for those ewes that can produce the same amount of production as other ewes but do it in fewer years. This study evaluated that total production of a group of ewes for 6 years.

Experimental Procedure

Development of the experimental flock and production for each age of ewe was outlined in parts 1 and 2 of this series of articles, respectively (SHEEP 85-6 and SHEEP 85-7). Cumulative production was based on only

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those ewes present at breeding time each year. When a ewe left the experiment, her previous production was no longer included in the analysis. Production after 6 years is presented in this paper. Production was tested using a least-squares analysis of variance with ewe type of birth, breed of ewe and management system as main effects.

Results

Least-squares means and standard errors for the five cumulative traits tested are found in table 1. No differences were found between single- and multiple-born ewes for any of the lamb production traits tested. Single-born ewes did produce more ($P<.05$) wool over their lifetime than multiple-born ewes (54.6 vs 51.4 lb.).

Finnsheep x Targhee ewes gave birth to more lambs ($P<.05$) than Suffolk x Targhee ewes (11.65 vs 8.06), which in turn gave birth to more lambs ($P<.05$) than Targhee ewes (7.30). Finnsheep x Targhee ewes gave birth to and weaned more lambs ($P<.05$) per ewe exposed than Targhee or Suffolk x Targhee ewes. Finnsheep x Targhee ewes also weaned more lambs ($P<.05$) per ewe than Suffolk x Targhee or Targhee ewes. Pounds of lamb weaned for Finnsheep x Targhee, Suffolk x Targhee and Targhee ewes were 480, 383 and 364, respectively. Targhee ewes produced more ($P<.05$) wool than Suffolk x Targhee (56.7 vs. 52.5) or Finnsheep x Targhee ewes (49.9 lb.).

Farm flock ewes gave birth to .85 more lambs and more pounds of lamb ($P<.05$) than range flock ewes. No differences were found between the two management systems for the two weaning traits or wool production.

Based on those ewes which remained in the study for 6 years, the addition of Finnsheep breeding into the ewe flock would increase lamb production and decrease wool production. These results indicate that the addition of Suffolk breeding did not result in increased production for the ewe flock. Although the two systems of management studied are unique to each other in their methods, only small differences were found in lamb and wool production.

TABLE 1. LEAST-SQUARES MEANS AND STANDARD ERRORS FOR CUMULATIVE PRODUCTION AFTER 6 YEARS^d

	Number of Lambs Born	Number of Lambs Weaned	Weight of Lambs Born (lb)	Weight of Lambs Weaned (lb)	Weight of Wool (lb)
Overall Mean	8.98	6.92	94.5	402	52.8
Ewe Type of Birth					
Single	9.07±.282	7.08±.270	93.9±2.90	414±16.0	54.6±1.23 ^a
Multiple	8.94±.198	6.96±.189	94.9±2.03	404±11.2	51.4±0.86 ^b
Breed of Ewe ^e					
T	7.30±.257 ^a	6.16±.247 ^a	88.1±2.65 ^a	364±14.6 ^a	56.7±1.13 ^a
S x T	8.06±.249 ^b	6.25±.238 ^a	87.8±2.55 ^a	383±14.1 ^a	52.4±1.09 ^b
F x T	11.65±.375 ^c	8.66±.359 ^b	107.3±3.85 ^b	480±21.3 ^b	49.9±1.64 ^b
Management System					
Farm	9.43±.214 ^a	7.00±.204	99.1±2.13 ^a	414±12.1	53.2±0.93
Range	8.58±.246 ^b	7.04±.236	89.7±2.53 ^b	404±13.9	52.8±1.08

^{abc} Means with unlike superscript in the same column and within main effects differ ($P < .05$).

^d All values based on a per ewe present basis.

^e T = Targhee; S x T = Suffolk x Targhee; F x T = Finnsheep x Targhee